



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/699,736

11/04/2003

Bing-Jei Liao

SUND 319C1

6426

23995

7590

06/14/2006

RABIN & Berdo, PC  
1101 14TH STREET, NW  
SUITE 500  
WASHINGTON, DC 20005

EXAMINER

SCHECHTER, ANDREW M

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/699,736

**Applicant(s)**

LIAO ET AL.

**Examiner**

Andrew Schechter

**Art Unit**

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/127,413.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/4/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "every two pairs of the pixel electrodes are separated by a groove, and the pixel electrodes of each pair of the pixel electrodes are separated by a protrusion". This is potentially unclear, in that it might be thought that the separation between two pixel electrodes always implies a "groove". The examiner's interpretation is that the gap must not be filled in with any other layers (other than the liquid crystal, of course). Referring to the applicant's Fig. 10B, the examiner interprets pixel electrodes 1002 and 1003 as being separated by a protrusion, but not being separated by a groove, despite there being a gap which is filled with the protrusion. That is, where there is a protrusion separating the electrodes, there is by definition not a groove, and where there is a groove, there is by definition not a protrusion. Thus, for instance, if

Art Unit: 2871

every space between electrodes had a protrusion such as 1015, then there would be no grooves, and the device would not read on the claim language. If this is the intent of the applicant, the present claim language is acceptable; if not, they should clarify what is meant in their response.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,665,041, respectively. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claims anticipate the present claims (a liquid crystal on silicon panel is a liquid crystal panel, though the reverse is not true).

***Allowable Subject Matter***

6. Claims 1-9 would be allowable if the rejections above are overcome appropriately.
7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose an LCD with vertically aligned liquid crystal molecules, wherein every two pairs of the pixel electrodes are separated by a groove and the pixel electrodes of each pair of the pixel electrodes are separated by a protrusion (as understood by the examiner, see above).

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2002/0089630 to *Liu* discloses a vertical aligned LCD with protrusions and concave portions, but not separating pixel electrodes as recited in claim 1.

U.S. Patent No. 5,452,114 to *Hotta* discloses alternating protrusions and grooves between electrodes, but not in the context of having liquid crystal molecules in a vertically-aligned mode.

U.S. Patent No. 5,907,380 to *Lien* discloses a vertically-aligned LCD with protrusions between alternating pairs of pixel electrodes [see Fig. 12], but the protrusions do not "separate" the pixel electrodes, since they are on top of the pixel

Art Unit: 2871

electrodes rather than between them; also, while there are gaps between the pixel electrodes, *Lien* does not explicitly disclose grooves between them (in Fig. 2, for instance, the gaps are filled in with layer 38).


U.S. Patent No. 5,831,704 to *Yamada* discloses an LCD which can be vertically aligned with protrusions [4] between pixel electrodes, but not grooves between the pixel electrodes [the structures at 2a could be considered grooves, but they are in the center of pixel electrodes, rather than between pixel electrodes].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nelms can be reached at (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Andrew Schechter  
Primary Examiner  
Technology Center 2800  
7 June 2006